plankton and on the ground-fauna at various depths down to about 900 fathoms. Much material was also obtained for him by Japanese deep-sea fishermen with "Dabo" lines.

In summer the warm Kuro Siwo waters cover the surface of Sagami Bay, but in winter the north-west winds bring down the cold current to overlie it, so that the self-registering thermometers reveal a layer of warm water between two cold layers. In this warm layer the fauna of the Kuro Siwo is found, while the surface layer has a very different and largely vegetable plankton. As has been said, there is great mortality among both these sets of organisms, with the result that the ground-fauna at all depths, from tide-marks downwards, is extraordinarily rich. The broken nature of the sea-bottom, providing a greatly increased surface and variety of habitat, no doubt contributes to the same result. Another peculiarity of the fauna of Sagami Bay is the appearance in very moderate depths, of sometimes as little as fifty fathoms, of forms which have usually been found considerably lower, at 500 fathoms to 1500 fathoms. Doflein accounts for this partly by the suitably low bottom temperature, but more by the stillness of the water. Many of the so-called deep-sea forms are, he says, more properly still-water forms, specially adapted to absence of motion rather than to the other peculiar conditions of the deep sea, and their vertical range would probably be found to be considerably greater were the same attention to be paid to the exploration of intermediate depths that has been given to the investigation of the shore-belt and the deep sea. This surmise appears extremely plausible.

Bad weather and accidents to his apparatus brought the investigations once more to a standstill, and Dr. Doflein left Japan. On his way home he stayed in Ceylon, and he gives an interesting account of his researches on fungus-growing termites there. Some remarks on the spinning ant Œcophylla bring the book to a close. We have read it with great pleasure. The scientific portions are in places very suggestive, the chapters on the ways and customs of various countries, and especially of Japan, are bright and attractive, and the numerous illustrations are often really beautiful. L. A. B.

## BIRD BOOKS FOR BEGINNERS.

*A Handbook of British Inland Birds.* By Anthony Collett. With coloured and outline plates of eggs by Eric Parker. Pp. xix+289. (London: Macmillan and Co., Ltd., 1906.) Price 6*s*.

*A Pocket-book of British Birds.* By E. F. M. Elms. Pp. viii+150. (London: West, Newman and Co., 1906.) Price 2*s*. 6*d*.

IF in these days the way is not made smooth for the young ornithologist it is not for lack of books written in his interest. Mr. Collett thinks that there should be a useful place for a book in which the space gained by omitting the sea and shore birds is devoted to a closer account of the inland species, and the chief intention of his handbook is to supply as plain and simple a means as possible for the identification of those birds, and their nests and eggs, which are to be met with in the inland districts of this country, and are therefore more likely to cross the path of the greater number of persons interested in bird life. Knowing his birds thoroughly well, the author has written most charming and interesting accounts of them, and his long experience of them in the field has enabled him to introduce into his sketches much of the individual character and temperament of each species—those little peculiarities a knowledge of which is only to be gained by long acquaintance, and by which the old hand knows his birds at a glance or by a note heard in the distance. When the object is to teach the beginner in the study this intimate knowledge is very necessary, and all birdmen (who will read the book for the pleasure it will give them) will recognise and appreciate the happy touches of description which arise from it.

As the book will, we think, be in some demand, we offer a few suggestions in view of another edition. To give the salient features of the general appearance of a bird as seen at a little distance should not be difficult, but the descriptions here, in many cases, seem to be hardly sufficient. The fieldfare, for instance, is merely differentiated from the missel thrush (in plumage) as having a more distinct grey patch on the lower part of the back; whereas its greyish head, rich brown mantle, and the blue-grey of the patch on its lower back (from which the bird is sometimes called the "pigeon" felt) might have been pointed out as sufficiently apparent to serve as identification marks. The short wings of the sparrow-hawk might have been alluded to, as well as the want in the cirl bunting of the bright chestnut rump so conspicuous in the yellow hammer; the distinctly colder tints easily seen in life of the marsh compared with those of the reed warbler, and the streaked under parts of the adult Montagu's harrier are merely further instances of the kind of recognition marks we wish to indicate.

As the book is intended for readers whose knowledge of ornithology is of an elementary character, something more about the plumage of the chaffinch than the statement that the hen bird is a good deal duller than the cock is desirable, and the want of it is all the more felt, because the following species, the brambling, is said rather closely to resemble the chaffinch, and is described in comparison with it. The whitethroat is described as if it were uniformly coloured on the upper parts, whereas the greyish head contrasts with its rufous-brown back; and as we are dealing with birds seen at a little distance, it would have given a better idea of the cock stonechat to say that he had a black head than that he had a conspicuous black patch on the throat and face. We should not have said that the pied fly-catcher had the appearance of being of slender build, nor can we detect that the eggs of the whinchat are usually a good deal greener and deeper in tint than ordinary hedge-sparrows' eggs. The author thinks



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that the notion that the mistletoe thrush haunted apple trees for the sake of eating mistletoe berries, and hence got its name, is not confirmed by the bird's actual habits; but we have it on the authority of our greatest living ornithologist (an opinion based on personal observations) that the connection of the bird with the mistletoe is no figment, as some have tried to maintain, and that this thrush is exceedingly fond of the luscious viscid berries of the mistletoe.

While fully allowing that the attempt to put a bird's note into syllables is in most cases a failure (so far as people in general are concerned), there are exceptions, and it would surely have been desirable in the interests of the young field ornithologist to give in words as many of the more remarkable bird-notes as lend themselves to this treatment. The "you-tick" of the whinchat and the "twit me-dick" of the quail (from which the birds take local names), the "hweet-tit-tit" of the redstart and the "chuck-chucka" of the red-legged partridge, are a few cases in point. But to take the case of the curlew as here treated, no mention is made of the fact that some of its varied cries have suggested names for it, and the remark that "the cry recalls some of the notes of the plover, but is far more free and powerful," hardly seems to convey an adequate idea of the curlew's characteristic cries. We wonder if the song of the lesser whitethroat would strike most people as more "quiet and unobtrusive" than that of the whitethroat.

The descriptions of the nests and nesting habits are especially successful, and will be most interesting to experienced bird-nesters, as well as useful to the novice. The coloured figures give, on the whole, a good idea of the eggs, although some of the plates suggest three-colour printing, and that one colour has obtained undue prominence. White eggs are merely figured in outline, and the artist has succeeded in representing the characteristic shape of average specimens. An index, which is all that can be desired, and a classified list of breeding species and regular visitors make reference to the different species easy; but we cannot understand the application of the note to the latter, that the visitors are distinguished by italics, for we find very few names so treated, and among them those of both the yellow and the grey wagtails.

Mr. Elms's thin volume, which slides so easily into the pocket that there is no excuse for leaving it behind on a field day or omitting to take it out every morning during the migration seasons, is intended solely for the purpose of reference in the field. All our British birds (properly so-called) are included, the rare and accidental visitors or stragglers to our shores hardly coming within the scope of the book, as the chances of seeing them during a country ramble are very slight. A vast amount of information has been included in the small compass of this pocket-book; the plumage, period of residence in this country, language, habits, haunts, and food are all treated concisely under their several headings, as well as some particulars of the nidification; but in the last respect it is pointed out that the present volume is intended to be used and carried in conjunction with the new edition of Newman's "Bird-nesting and Bird-skinning," which is of the same size and issued by the same publishers, and contains full particulars of the nests and eggs. Some of the observations on bird language, those on some of the gulls and terns, for instance, do not appear to be altogether satisfactory, but this handy little volume (which is furnished with a good index) cannot fail to be of great service to the student of field ornithology.

## A GUIDE TO BRITISH DIPTERA.

*A Preliminary List of Durham Diptera, with Analytical Tables.* By the Rev. W. J. Wingate. Transactions of the Natural History Society of Northumberland, Durham, and Newcastle-upon-Tyne. (New Series.) Vol. xi. Pp. vii+416; with seven plates. (London and Edinburgh: Williams and Norgate; Newcastle-upon-Tyne: F. and W. Dodsworth, 1906.) Price 9*s*.

THE author, or, as he would probably prefer to be styled, the compiler, of this excellent manual has done himself less than justice, for if, instead of the modest title associated with the name of a single English county, he had chosen some such designation as that at the head of this notice, he would more accurately have expressed the scope of his work and would also, perchance, have brought the latter to the notice of a wider circle of readers.

Little by little budding entomologists in this country are beginning to realise that butterflies and moths and beetles are not the only orders of insects worthy of study, and the number of those who devote their energies to the flies, or Diptera, though still small by comparison with that of the students of the more popular orders, is steadily increasing. As Mr. Wingate truly remarks in his preface, no other order of insects "has so many interesting and varied life-histories, and none so deeply affects the human race, whether as protectors when acting the part of scavengers, or depredators destroying the crops, or scourges carrying the deadly micro-parasite." Unfortunately for the beginner, the bulk of the literature dealing with European Diptera is in foreign tongues, chiefly German, and, Walker's "Insecta Britannica" being hopelessly inadequate and out of date, it has hitherto been impossible to satisfy the natural demand of the novice for a work in English that, while supplying an outline of the structure and classification of Diptera, will at the same time provide the means for the identification of the bulk of the British representatives of the order. The basis for all work upon British Diptera is, of course, Verrall's "List," the second edition of which was published in 1901. In this are the names of 2884 species, and when it is added that Mr. Wingate's tables, which are chiefly derived from Schiner's classical work on the Diptera of Austria, furnish characters for the determination of no fewer than 2210 of these, it will be seen that the present volume should go far towards supplying the British student with precisely the aid that he requires. In addition to those already mentioned, details are



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